

Introduction to Computational Advertising

MS&E 239

Stanford University

Autumn 2011

Instructors: Andrei Broder and Vanja Josifovski

General course info

- Course Website:
<http://www.stanford.edu/class/msande239/>
- TA: **Krishnamurthy Iyer**
 - Office hours: Tuesdays 6:00pm-7:30pm, Huang
- Course email lists
 - Staff: msande239-aut1112-staff
 - All: msande239-aut1112-students
 - Please use the staff list to communicate with the staff
- Lectures: 10am ~ 12:30pm Fridays in HP
- Office Hours:
 - After class
 - Andrei and Vanja will be on campus for 2 times each to meet and discuss with students. Feel free to come and chat about even issues that go beyond the class.

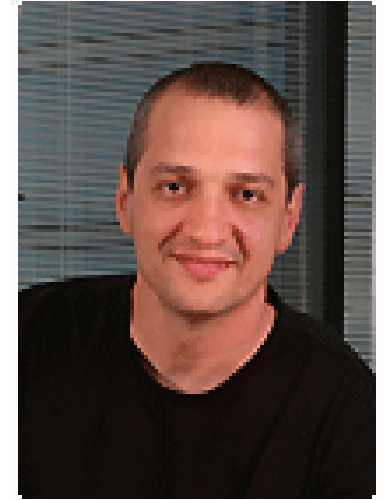
Instructor



- **Dr. Andrei Broder**

- Fellow and Vice President for Search and Computational Advertising in Yahoo! Research
- Chief Scientist of Yahoo's Advertising Technology and Search Groups
- Research interests: computational advertising, web search, context-driven information supply, and randomized algorithms
- B. Sc. Summa cum Laude from the Technion, M.Sc. and Ph.D. in Computer Science at Stanford University under Don Knuth
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Instructor



- **Dr. Vanja Josifovski**

- Senior Director at Yahoo! Research
- Research Area: Computational Advertising, Search
- Previously at IBM Research working on databases and enterprise search
- M.Sc. from University of Florida, PhD from Linkopings University in Sweden
 - vanjaj@yahoo-inc.com
 - http://research.yahoo.com/Vanja_Josifovski

Disclaimers

- This talk presents the opinions of the authors. It does not necessarily reflect the views of Yahoo! inc or any other entity.
- Algorithms, techniques, features, etc mentioned here might or might not be in use by Yahoo! or any other company.
- These lectures benefitted from the contributions of many colleagues and co-authors at Yahoo! and elsewhere. Their help is gratefully acknowledged.

Course Overview (subject to change)

1. 09/30 Overview and Introduction
2. 10/07 Marketplace and Economics
3. 10/14 Textual Advertising 1: Sponsored Search
4. 10/21 Textual Advertising 2: Contextual Advertising
5. 10/28 Display Advertising 1
6. 11/04 Display Advertising 2
7. 11/11 Targeting
8. 11/18 Recommender Systems
9. 12/02 Mobile, Video and other Emerging Formats
10. 12/09 Project Presentations

Class requirements

- Homework 40%
- Project 40%
- Quizzes 10%
- In-class short presentation 10%
- Active attendance strongly encouraged!

Projects – 40%

- Group assignment
 - Preferred group size is 3
- Start forming groups!
- Project commenced at the second class
- Chose one of two projects
 - Real world online advertising
 - Algorithmic project

Real world advertising project

- Craft a campaign for a real world company
- Find a company that can benefit from online advertising
 - Local business
 - Upcoming company (startup)
- Funding provided (\$300)
- Craft campaigns
 - Major search engines
 - Display advertising Facebook/Google/Yahoo/MSFT
 - Smaller outlets that allow for customization/optimization
- Adjust campaign mid flight
- Important to learn something insightful!
- Write report and present at the last lecture (15min)

Algorithmic project

- Implement a small scale similarity search engine
- We provide a dataset based on a real world ad corpus
- Build an inverted index
- Implement two algorithms
- Explore multiple variants of the algorithms
- Write a report and present at the last class (15min)

Homework – 40%

- Total of 3 homework assignments
- Take home, open book one week to finish
- Third assignment to be a take-home, final with problems covering the whole course
- Homework are individual assignments
 - Please do not work together on the homework assignments
 - If you have any questions please contact the staff

Quizzes – 10%

- Total of 2 quizzes
- In class after the break for 10 minutes
- A few short questions covering the salient points from the class
- The goal of the quizzes is to motivate attendance

In-class presentation – 10%

- Every student should participate in a in-class presentation
- 15 minutes after the break
- Describe the business model and the technology of a given company in the computational advertising field
- Kris, our TA will do a presentation in the next class to demonstrate the format
- Please start forming groups (3-4 people per group), and contact Kris about the scheduling.
- We might need to have 2 presentations in some classes to accommodate for everybody.